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90,379P VII-B, X-G1. 20.7.65. BADI

DISCONTINUOUS DEODORISATION OF AQS. POLYMER DISPERSIONS.

GE. 1,248,943 clg. (Non-Con) 20.7.65. (GE) as B 82,909 Pub. 31.8.67. Badische Anilin.

NEW

Volatile impurities are removed from aqs. polymer dispersions by passing steam into boiling dispersion [illegible]aking resultant foam-steam mixt. and separa[illegible]g

ADVANTAGES

Simple discontinuous method requiring no costly plant. Economic use of steam. Effective deodorisation.

USES

Esp. in conjunction with batch polymerisation.

SPECIFICALLY

Dispersions pref. have surface tension <40 dyne/cm. and may be aqs. dispersions of (co)polymers from vinyl chloride, vinyl esters, (meth)-acrylic esters, styrene, butadiene, polymers containing SO_3H and/or COOH and/or $CONH_2$, groups or dispersions containing sulph(on)ated emulsifiers. Volatiles include excess monomer, low-mol. by-products, emulsifiers and other auxiliaries. Foam-steam mixt. is broken at flow rates >100 m/sec. by rapidly diminishing pressure by ~ 100 - 350 torr. <0.2%, often <0.1% volatiles remain.

EXAMPLE

800 kg. 50% aqs. dispersion of 50% n-butyl acrylate/50% styrene copolymer were heated to 62°C in 1 m^3 vessel, which was evacuated to 30 torr. so that contents boiled. Foam and steam formed were pushed up rising tube, passed through constricted nozzle-like end, where foam was broken, and into separator. Broken foam was recycled. 130 kg/hr. steam were injected through bottom of

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vessel, keeping contents at 69°C. Pressure loss in rising tube and nozzle was ~ 180 torr. After 3 hr., residual monomer content had fallen from 1.65 to 0.018% (based on solids in dispersion).

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